

**REMARKS**

Claims 12 to 26 and 29 to 31 are currently pending in the present application.

In view of this response, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

With respect to paragraph three (3) of the Final Office Action, claims 12 to 26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,691,034 (the “Patera” reference) in view of U.S. Patent No. 5,557,278 (the “Piccirillo” reference).

To reject a claim under 35 U.S.C. § 103(a), the Office bears the initial burden of presenting a *prima facie* case of obviousness. *In re Rijckaert*, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish *prima facie* obviousness, three criteria must be satisfied. First, there must be some suggestion or motivation to modify or combine reference teachings. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

Also, as clearly indicated by the Supreme Court in *KSR*, it is “important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements” in the manner claimed. *See KSR Int’l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727 (2007). In this regard, the Supreme Court further noted that “rejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *Id.*, at 1396. Second, there must be a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Third, the prior art reference(s) must teach or suggest all of the claim features. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974).

Still further, the prior art must disclose or suggest each claim feature and it should also provide a motivation or suggestion for combining the features in the manner contemplated by the claim. ( *See Northern Telecom, Inc. v. Datapoint Corp.*, 908 F.2d 931, 934 (Fed. Cir. 1990), *cert. denied*, 111 S. Ct. 296 (1990); *In re Bond*, 910 F.2d 831, 834 (Fed. Cir. 1990)). Thus, the “problem confronted by the inventor must be considered in

determining whether it would have been obvious to combine the references in order to solve the problem”, Diversitech Corp. v. Century Steps, Inc., 850 F.2d 675, 679 (Fed. Cir. 1998).

Claim 12 relates to a method for determining an accident risk of a first object with at least one second object, including the features of *determining the accident risk as a function of a collision probability and a hazard probability of the at least one second object in a predefined region, and determining the collision probability and the hazard probability as a function of motions of the first and at least one second object.*

In contrast, the “Patera” reference is limited to “collision prediction and avoidance of airborne and spaceborne moving vehicles.” (“Patera” reference, column 1 lines 12 to 13). Furthermore, the “Patera” reference does not disclose or even suggest the feature of determining the accident risk *as a function of a collision probability and a hazard probability* of the at least one second object in a predefined region, as provided for in the context of the presently claimed subject matter.

The “Patera” reference merely refers to predicting if there will be a collision between objects based on trajectories and provides maneuvering instructions to avoid such a predicted collision. It states that “the method determines risk of a potential collision between a subject object and a target object, and determines an optimum maneuver to avoid potential collision. The subject object may be an aircraft, an orbiting spacecraft, a launch spacecraft, or a free space traveling spacecraft.” (“Patera” reference, column 4, lines 17 to 22). In particular, the “Patera” reference does not disclose nor even suggest the feature of determining the accident risk as a function of a hazard probability, as provided for in the context of the claimed subject matter. In Patera, the only probability that is calculated is the collision probability.

In the present application, a hazard is described at page 2, lines 1 to 5, page 6, lines 31 to 33, and page 16, lines 17 to 23, of the Substitute Specification.

Thus, the “Patera” reference does not disclose (or even suggest) the feature of a collision probability and a hazard probability. As a result, the “Patera” reference does not disclose or even suggest the features of determining the accident risk as a function of a collision probability and a hazard probability of the at least one second object in a predefined region, and determining the collision probability and the hazard probability as a function of motions of the first and at least one second object, as provided for in the context of claim 12.

The Final Office Action acknowledges these deficiencies of “Patera,” but relies on the “Piccirillo” reference to cure the critical defects. It is respectfully submitted that the “Piccirillo” reference does not in any way cure the deficiencies of the “Patera” reference for at least the following reasons.

The secondary “Piccirillo” reference does not disclose nor suggest the feature of “determining the *accident risk* as a function of ... *hazard probability*”, as provided for in the context of the claimed subject matter. It merely determines objects on a runway and, in response, provides warnings. For example, it is stated that the “AIHR can provide visual and aural alarms for runway incursions. Advisories for cautions and warnings involving aircraft, vehicles and obstacles on active runways, approach paths to runways, and intersecting taxiways can be provided.” (“Piccirillo” reference, column 4, lines 22 to 25).

It is believed and respectfully submitted that any review of the “Piccirillo” reference makes clear that an *accident risk* as a function of *hazard probability* is absolutely not disclosed. To the extent the Final Office Action is contending that a mere mention of a hazard in the “Piccirillo” reference would suggest the features of the claimed subject matter to one of ordinary skill in the art, it is respectfully submitted that this conclusion is simply not supported by the cited prior art. This is because the “Piccirillo” reference does not disclose anything about *accident risk* or *hazard probability*, let alone collision probability.

In the Remarks section of the Final Office Action, a list of terms are provided as assertedly disclosing hazard probability: “near accident,” “possible conflict situations,” “potential for collision,” “reduce incidence of collision,” etc. This assertion is respectfully traversed, for at least the following reasons.

It is first respectfully submitted that the Office Actions to date essentially ignore the proper meanings of the terms, like “accidental risk” and “hazard probability” – which are to be understood in view of the specification. In particular, as to the specification terms -- which are plainly supported, the Office essentially ignores the reasonable interpretation of the above-discussed terms and features, as provided for in the context of the claimed subject matter, and as would be understood by a person having ordinary skill in the art based on the specification. (See In re Weiss, 26 U.S.P.Q.2d 1885, 1887 (Fed. Cir. 1993) (when interpreting a claim term or phrase, one must “look to the specification for the meaning ascribed to that term”; Board reversed) (unpublished decision); In re Okuzawa, 190 U.S.P.Q. 464, 466 (C.C.P.A. 1976) (“claims are not to be read in a vacuum, and limitations therein are

to be interpreted in light of the specification in giving them their broadest *reasonable* interpretation”; Board reversed; emphasis in original) (citing *In re Royka*, 180 U.S.P.Q. 580, 582-83 (C.C.P.A. 1974) (claims are “not to be read in a vacuum and while it is true that they are to be given the broadest reasonable interpretation during prosecution, their terms still have to be given the meaning called for by the specification of which they form a part”; Board reversed; emphasis in original); and *In re Rohrbacher*, 128 U.S.P.Q. 117, 119 (C.C.P.A. 1960) (an “applicant is his own lexicographer and words used in his claims are to be interpreted in the sense in which they are used in the specification”; Board reversed)).

*It is respectfully submitted that this is exactly the case here since contrary to the foregoing law, the Final Office Action simply reflects its own unreasonable reading of the discussed terms (like “accident risk” and “hazard probability”) without even making a distinction between the sense of the terms, as used in the specification.* In this regard, the Substitute Specification makes clear the distinction between hazard probability and collision probability. (See, e.g., Substitute Specification, page 2, lines 1 to 10).

Further, none of the terms cited by the Final Office Action disclose nor even suggest a hazard probability. At best, it may indicate whether something is possible -- which is completely different from what the probability of occurrence is. Indeed, the terms relied upon by the Final Office action, including “possible conflict situations” and “potential for collision,” merely refer to whether a certain situation is possible, but in no way discloses hazard probability, as provided in the context of the claimed subject matter.

Still further, as clearly indicated by the Supreme Court in *KSR*, it is “important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements” in the manner claimed. See *KSR Int’l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727 (2007). In this regard, the Supreme Court further noted that “rejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” In contrast to the Supreme Court’s stated guidelines, the Final Office Action has not provided any “articulated reasoning with *some rational underpinning* to support the legal conclusion of obviousness”; instead, the Office is relying on “mere conclusory statements.” Simply asserting that “[i]t would have been obvious to one of ordinary skill in

the art ... to modify the teach[ing] of Patera ... to avoid [an] accident or collision [to] occur” (Final Office Action, page 3) is conclusory at best. It absolutely does not provide any meaningful *reasoning* as to *why* one of ordinary skill in the art would have been motivated to make the asserted modification. Indeed, the “Patera” reference itself is a collision avoidance maneuvering method. It logically follows that it would not benefit from another reference if the suggested end result would be the same. Thus, the Office is simply stating that it would have been *obvious to try* the combination. However, the “obvious to try” rationale is clearly insufficient to support a *prima facie* case of obviousness rejection.

For at least the reasons explained above, the “Patera” reference (either alone or in combination with the “Piccirillo” reference) does not disclose nor suggest all the features of claim 12.

As further regards all of the obviousness rejections, any Official Notice is respectfully traversed to the extent that it is maintained and it is requested that the Examiner provide specific evidence to establish those assertions and/or contentions that may be supported by the Official Notices under 37 C.F.R. § 1.104(d)(2) or otherwise. In particular, it is respectfully requested that the Examiner provide an affidavit and/or that the Examiner provide published information concerning these assertions. This is because the § 103 rejections are apparently being based on assertions that draw on facts within the personal knowledge of the Examiner, since no support was provided for these otherwise conclusory and unsupported assertions. (See also MPEP § 2144.03).

Accordingly, it is respectfully submitted that claim 12 is allowable, as are its dependent claims 13 to 26 and 29 to 31.

Withdrawal of the obviousness rejections of the claims is therefore respectfully requested.

**CONCLUSION**

It is therefore respectfully submitted that all of the presently pending claims are allowable. It is therefore respectfully requested that the rejections (and any objections) be withdrawn. Since all issues raised have been addressed and obviated, an early and favorable action on the merits is therefore respectfully requested.

Respectfully submitted,

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